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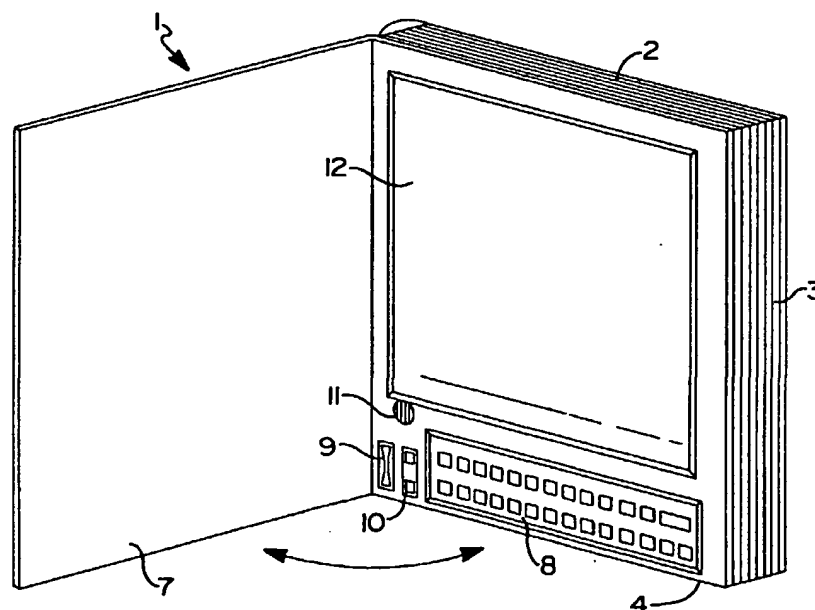
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DIGITAL PHOTO ALBUM



(57) Abstract: A digital machine which has the look and feel of a traditional photo album (1), but is different in operation. The machine stores indefinitely more photos than a traditional photo album, and with information about each photo. The photos are stored as long as desired and displayed on a screen (12) with digital quality, but without the clutter of conventional printed photographs which are susceptible to loss, damage, destruction, and deterioration with time.

WO 01/86407 A1

DIGITAL PHOTO ALBUM

The present application claims priority from United States Patent Application
5 Serial Number 09/566,427 filed on May 8, 2000.

The present invention relates generally to certain new and useful improvements
in photo albums. More particularly, the present invention relates to a novel digital photo
album for storing and saving pictures, photographs, and other images with digital
quality.

10 **Background of the Invention**

A conventional photo album is severely limited in the number of photographs
it can hold. Consequently, an individual or family must resort to using a plethora of
conventional photo albums in order to try to store all of the desired photographs

Furthermore, frequently with the passage of time many valuable and/or
15 irreplaceable photographs may be damaged, mutilated, destroyed and/or lost. In
addition, with conventional photo albums there is no convenient way to provide a
commentary relating to each individual photograph, including the place, date, and
circumstances pertaining to a particular photograph.

Various attempts have been tried to remedy and/or avoid the aforementioned
20 problems, but such attempts have been unsuccessful.

Description of the Relevant Art

The relevant art is exemplified by the following United States patents.

U. S. Patent 4,041,463 issued in 1977 to Slutzky et al. entitled "DOCUMENT FILING, UPDATING AND RETRIEVAL SYSTEM" discloses a system comprising:

5 a video tape recorder; an electro-optic scanner for converting images on source documents to video signals; means for generating update signals for source documents; a controller for directing video signals to first storage sites in the video tape recorder and update signals to second storage sites in the video tape recorder; a monitor for displaying source documents and update information; and means for selectively mixing the update
10 signals for the displayed source document with the video signals therefor for display therewith on the monitor. Execution of a print operation is commanded when a document desired for hard copy production is being displayed on the monitor. Upon executing a print command in the keyboard, the controller will signal the printer via a line to cause the stored document in the buffer storage to be sent to the printer where
15 a hard copy document will be made.

U. S. Patent 5,274,463 issued in 1993 to Matsumoto et al. entitled "STILL PICTURE STORING AND SEQUENCING" discloses an apparatus comprising: a picture preparation circuit for preparing a plurality of pictures and adding identification data to each picture; memory for storing the pictures with identification data added
20 thereto; a transmission data preparation circuit for preparing picture transmission data; a command signal generation circuit for instructing picture transmission; and a controller for reading out pictures.

Other prior art patents are: Takeuchi, et al. U. S. Patent 4,888,648; Manico, et al. U. S. Patent 5,520,544; and Norris U. S. Patent 5,563,722.

It is a desideratum of the present invention to avoid the animadversions of the above-described prior art techniques, machines, devices, mechanisms, and systems.

5 **Summary of the Invention**

 The present invention provides a digital photo album, comprising: an external housing which externally resembles a conventional photograph album book; said housing including therewithin first means for inputting image information, at least one central processing unit, memory means for storing a plethora of images therein, a functional keypad unit, and a screen unit for displaying desired ones of said plethora of stored images; and said first means, said central processing unit, said memory means, said functional keypad unit, and said screen unit being operably and electronically interconnected so that said plethora of said images may be stored thereby and selectively displayed on said screen unit with digital quality.

10

15 The present invention provides a new and useful machine for storing and saving photographs, pictures and other images with digital quality, but without having the clutter of conventional photographs and conventional photo albums.

 It is, therefore, one of the primary objects of the present invention to provide a novel machine for storing thousands, or tens of thousands, or hundreds of thousands of images in a single digital photo album.

20

It is another object of the present invention to provide a novel machine as described hereinabove which includes at least one screen that can display images saved in memory.

It is a further object of the present invention to provide a novel machine as described hereinabove which is portable, and can be powered by battery or external power.

Another of the invention is to provide a machine as described hereinabove which externally looks like a conventional photo album that can be placed on a shelf like a conventional photo album.

A further object of the invention is to provide a machine as described above which can store, save, display, and/or print photographs without the danger or worry of photographs getting lost, destroyed and/or damaged by age.

An additional object is to provide a machine as described above including the capability of saving an audio message with each photograph to remind the user of the significance of and/or the date the photograph was taken.

The present invention possesses many other advantages and features which will become more apparent to those persons skilled in this area of technology and others when reading the detailed description of one exemplary preferred embodiment of the present invention as set forth hereinbelow in conjunction with the accompanying drawings.

Brief Description of the Drawings

FIG. 1 is a perspective illustration of a preferred embodiment of the present invention, and depicting how the album machine looks when the cover is opened.

FIG. 2 is top view of the FIG. 1 album machine showing how the imitation book binder cap can be removed.

FIG. 3 is a view of the Fig. 2 album machine taken from the right side thereof.

FIG. 4 is a view of the front of the album machine with the cover opened.

FIG. 5 illustrates the inner components of the album machine.

Detailed Description of One Preferred Embodiment

In accordance with a preferred embodiment of the present invention, there is provided, as illustrated in FIG. 1, a novel machine or digital photo album 1 for storing tens or hundreds of thousands of images or photographs, but which appears from the exterior to be a conventional leather-bound photograph album book that may be placed on a bookshelf like any other conventional book.

The album 1 includes artificial page facades 2, 3 and 4 on three of its edge faces, but not necessarily on the album spine 5. The spine 5 may preferably, but not necessarily, be provided with a removable imitation book binder cap 6.

The album 1 includes a cover 7 which may be opened to reveal a keypad 8, control switches 9 and 10, a speaker 11, and a screen 12 for displaying images stored in memory and which can be called up at any time. Preferably, but not necessarily, the cover 7 may be removable.

Preferably, but not necessarily, the album 1 is approximately 10 inches wide by 12 ½ inches in height by 1 ½ inches in depth, and the screen 12 is approximately 8 inches in width by 10 inches in height.

With reference to FIG. 3, there is illustrated the artificial page facade access door 3 opened on hinges, brackets or hinges arms 13 and 14 to reveal and make accessible a floppy disk memory card and drive entry 15, an ejection button 16, a camera input 17, a scanner input 18, an output port 19, and an external power port 20.

FIG. 4 illustrates more clearly the screen 12, a message ticker display panel 21 for displaying a personal message, the speaker 11, an ON/OFF switch 9, a Volume switch 10, and the keypad 8. Button 22 is used for entering the letter "A", or the number "0" when needed. Button 23 is used for entering the letter "B", or the number "1" when needed. Button 24 is used for entering the letter "C", or the number "2" when needed. Button 25 is used to enter the letter "D", or the number "3" when needed. Button 26 is used to enter the letter "E", or the number "4" when needed. Button 27 is used to enter the letter "F", or the number "5" when needed. Button 28 is used to enter the letter "G", or the number "6" when needed. Button 29 is used to enter the letter "H", or the number "7" when needed. Button 30 is used to enter the letter "I", or the number "8" when needed. Button 31 is used to enter the letter "J", or the number "9" when needed.

Button 32 is the BACK button, and is used to enter the letter "K". The BACK button 32 allows the user to scroll back through memory to previous images.

Button 33 is the NEXT button, and is used to enter the letter "L". The NEXT button 33 allows the user to scroll forward through the images in memory.

Button 34 is the PICTURE button, and is also used to enter the letter "M". The PICTURE button 34 allows the user to go to a specific image in memory at any time. The user would press the PICTURE button 34, then the number of the image the user wishes to go to, then the ENTER button 47, and that image will appear on the screen.

Button 35 is the MENU button, and is also used to enter the letter "N". The MENU button 35 displays the options of the album machine 1. The MENU options are: a) View Pictures - which allows the user to view images that are stored in memory; b) Input Roll - which allows the user to unload picture images from an external digital camera into the memory; c) Output/Printer - which allows the user to print images on a printer (not shown); d) Scan Photo - which allows the user to input photos scanned by an external scanner (not shown) into memory; e) Hide All - which allows the user to code all photos in the memory, only to be accessed by code; f) Reorder Pictures - which allows the user to automatically shift all the images in memory one after another.

Button 36 is the SAVE button, and is also used to enter the letter "O". The SAVE button 36 allows the user to save images into memory. After an image is inputted by a camera or scanner, the user can press the SAVE button 36, and then the YES button 41 if the user wishes to save the image. Then the user will be asked "Save in next spot?"; the user can then press the YES button 41 or the NO button 40. Then the user can save the image to any number in the memory by entering that corresponding desired number.

Button 37 is the DELETE button, and is also used to enter the letter "P". The DELETE button 37 allows the user to delete images from memory. Once an image is called up from memory, it can be deleted if it is no longer desired in memory. Preferably, but not necessarily, the album machine 1 will also be provided with a safeguard feature to prevent accidental deletion of images.

Button 38 is the PRINT button, and is also used to enter the letter "Q". The Print button 38 allows the user to print images on a printer (not shown) when a printer is connected to the album machine 1 via the output port 19.

Button 39 is the MESSAGE button, and is also used to enter the letter "R". The Message button 39 allows the user to enter a personal message into memory. When an image is displayed on the screen 12, the user can press the MESSAGE button 39, and then enter a message. When the message mode is activated, the buttons become alphabetic keys. To add a space, the user can press the SPACE button 48 once. To end the message, the user can press the SPACE button 48 twice. The message will be saved in memory with that image, and can be called up by pressing the INFO button 46.

Button 40 is the NO button, and is also used to enter the letter "S". The NO button 40 allows the user to answer a question in the negative.

Button 41 is the YES button, and is also used to enter the letter "T". The YES button 41 allows the user to answer a question in the affirmative.

Button 42 is the - button, and is also used to enter the letter "U". The - button 42 allows the user to decrease a function.

Button 43 is the + button, and is also used to enter the letter "V". The + button 43 allows the user to increase a function.

5 Button 44 is the MODE button, and is also used to enter the letter "W". The MODE button 44 allows the user to perform different functions when viewing an image on the screen 12. For Contrast, the user presses the MODE button 44 once, and then the - button 42 or the + button 43 to control. For Brightness, the user presses the MODE button 44 again, and then the - button 42 or the + button 43 to control. For Focus, the user presses the MODE button 44 again, and then the - button 42 or the + button 43 to control. For Color, the user presses the MODE button 44 again, and then the - button 42 or the + button 43 to control. For Zoom, the user presses the MODE button 44 again, and then the - button 42 or the + button 43 to control, allowing the user to make the displayed image smaller or larger, respectively. For Hide, the user presses the MODE button 44 again, and then the YES button 41 if it is desired to hide the image, and then enters a five digit code, and the image will be saved. Pressing the MODE button 44 again will return the machine 1 to normal operations.

15 In order to unhide an image once the user comes to that number in memory, the user simply enters the five digit code pertaining to that image.

20 Button 45 is the DATE button, and is also used to enter the letter "X". The DATE button 45 allows the user to hear the date the image or photo was taken, via the speaker 11 by computer voice in memory.

Button 46 is the INFO button, and is also used to enter the letter "Y". The INFO button 46 allows the user to call up the personal message on the message ticker display panel 21.

Button 47 is the ENTER button, and is also used to enter the letter "Z". The ENTER button 47 allows the user to complete commands.

Button 48 is the SPACE button, and is also used to enter the symbol "#". The SPACE button 48 allows the user to perform the functions described hereinabove in association with the MESSAGE button 39.

FIG. 5 illustrates the interior components of the album machine 1. A lithium battery 49 and a back-up battery 50 are connected to a power supply 51, which in turn is connected to a power unit 52 on a mother board 53, a hard drive 54, the floppy disc memory card and drive 55, the ON/OFF switch 9, and the external power port 20.

The mother board 53 includes the power unit 52, a CPU 66 with fan, a PCI or USB port 56, a SCSI or USB port 57, a parallel or USB port 58, two DRAM or DIMM memory chips 59 and 60, a PCI-IDE port 61, an ATADI-IDE port 62, an AGP or VGA port 63 with graphics (32 or 64 bit) connected to the screen 12, a PS12 port 64, and a PCI unit 65 with sound card connected to the speaker 8 and the volume switch 9.

The output port 19, such as for connection to an external printer (not shown), is connected to the parallel or USB port 58. The scanner input 18 is connected to the SCSI or USB port 57. The camera input 17 is connected to the PCI or USB port 56. The floppy disc memory card and drive 55 is connected to the ATADI-IDE port 62 and to the hard drive 54. The hard drive 54 is also connected to the PCI-IDE port 61.

The screen 12 can display images, saved in memory, that can be called up at any time. The hard drive 54 contains the machine's operations. The disc memory and drive 55 is used for saving desired images. The keypad 8 control the functions of the album machine 1. Preferably, but not necessarily, the screen 12 comprises a flat TFT-type screen in color for clear pictures. All the components are housed within a leather covered, conventional -looking photo album type "book".

The album machine 1 is portable and can be shown to anyone anywhere. It can be powered by battery 49 and 50 or external power.

There has been illustrated in the accompanying drawings and described hereinabove only one unique and novel preferred embodiment of the present invention which can be constructed in many different configurations, arrangement of components, sizes, and shapes. It should be understood that many changes, modifications, variations, and other uses and applications will become apparent to those persons skilled in this particular area of technology and to others after having been exposed to the present specification and accompanying drawings.

Any and all such changes, modifications, variations, and other uses and applications which do not depart from the spirit and scope of the present invention are therefore covered by and embraced within the present invention and the scope of the accompanying claims.

CLAIMS

1 1. A digital photo album, comprising:
2 an external housing which externally resembles a conventional photograph
3 album book;
4 said housing including therewithin first means for inputting image information,
5 at least one central processing unit, memory means for storing a plethora of
6 images therein, a functional keypad unit, and a screen unit for displaying desired
7 ones of said plethora of stored images; and
8 said first means, said central processing unit, said memory means, said
9 functional keypad unit, and said screen unit being operably and electronically
10 interconnected so that said plethora of said images may be stored thereby and
11 selectively displayed on said screen unit with digital quality.

1 2. A digital photo album according to claim 1, wherein:
2 said first means includes at least one scanner input device.

1 3. A digital photo album according to claim 1, wherein:
2 said first means includes at least one camera input device.

1 4. A digital photo album according to claim 2, wherein:

2 said first means includes at least one camera input device.

1 5. A digital photo album according to claim 1, wherein:

2 said memory means includes at least one hard drive.

1 6. A digital photo album according to claim 2, wherein:

2 said memory means includes at least one hard drive.

1 7. A digital photo album according to claim 3, wherein:

2 said memory means includes at least one hard drive.

1 8. A digital photo album according to claim 4, wherein:

2 said memory means includes at least one hard drive.

1 9. A digital photo album according to claim 1, including:

2 second means for creating and saving a message with an individual image to

3 remind a viewer of the significance of said individual image; and

4 said means operating in conjunction with said functional keypad unit.

1 10. A digital photo album according to claim 2, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

1 11. A digital photo album according to claim 3, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

1 12. A digital photo album according to claim 4, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

1 13. A digital photo album according to claim 5, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

1 14. A digital photo album according to claim 6, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

1 15. A digital photo album according to claim 7, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

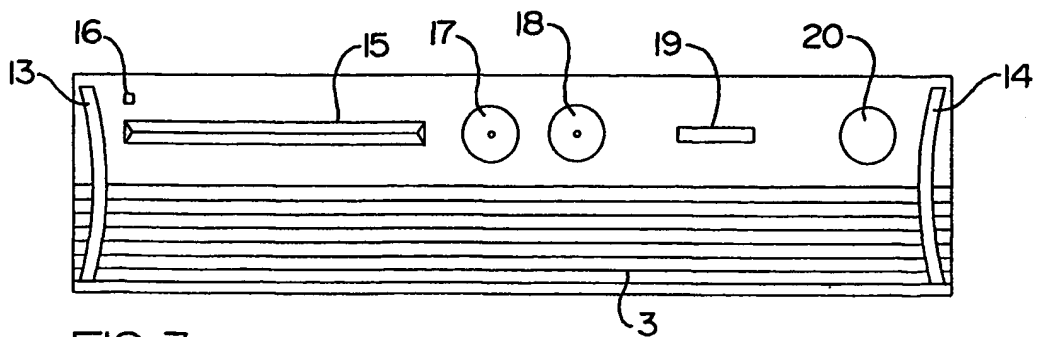
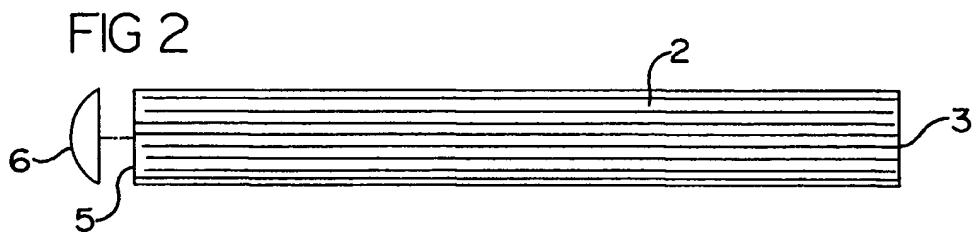
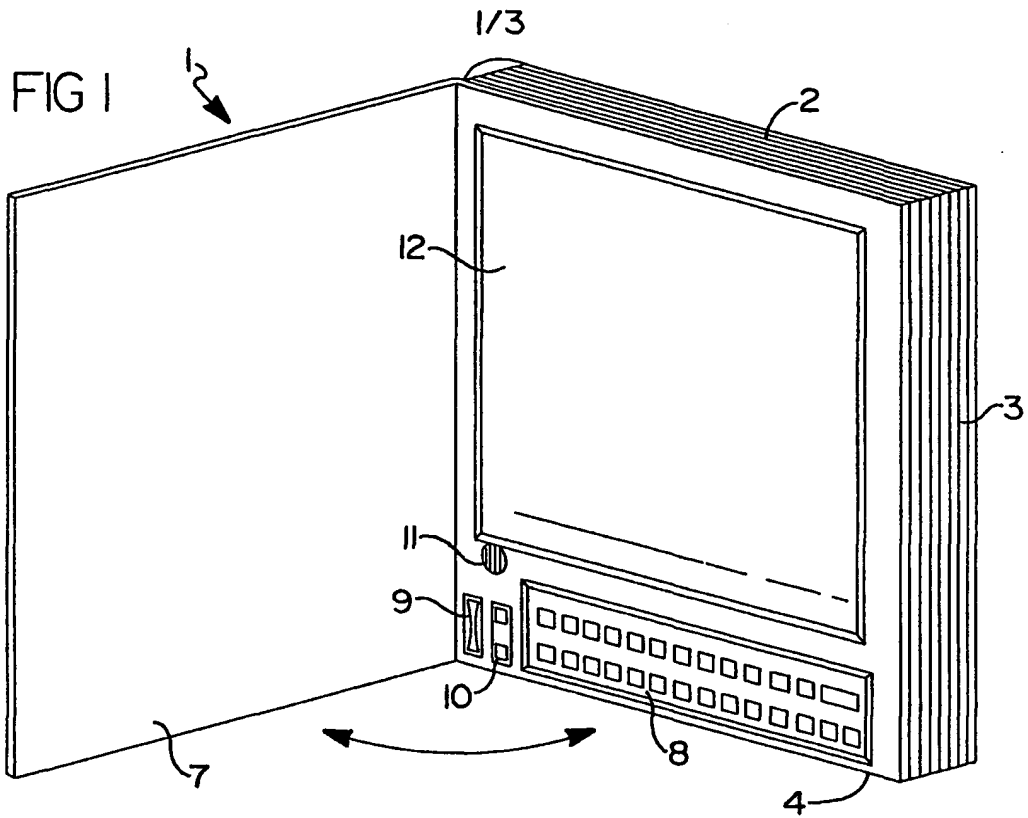
1 16. A digital photo album according to claim 8, including:
2 second means for creating and saving a message with an individual image to
3 remind a viewer of the significance of said individual image; and
4 said means operating in conjunction with said functional keypad unit.

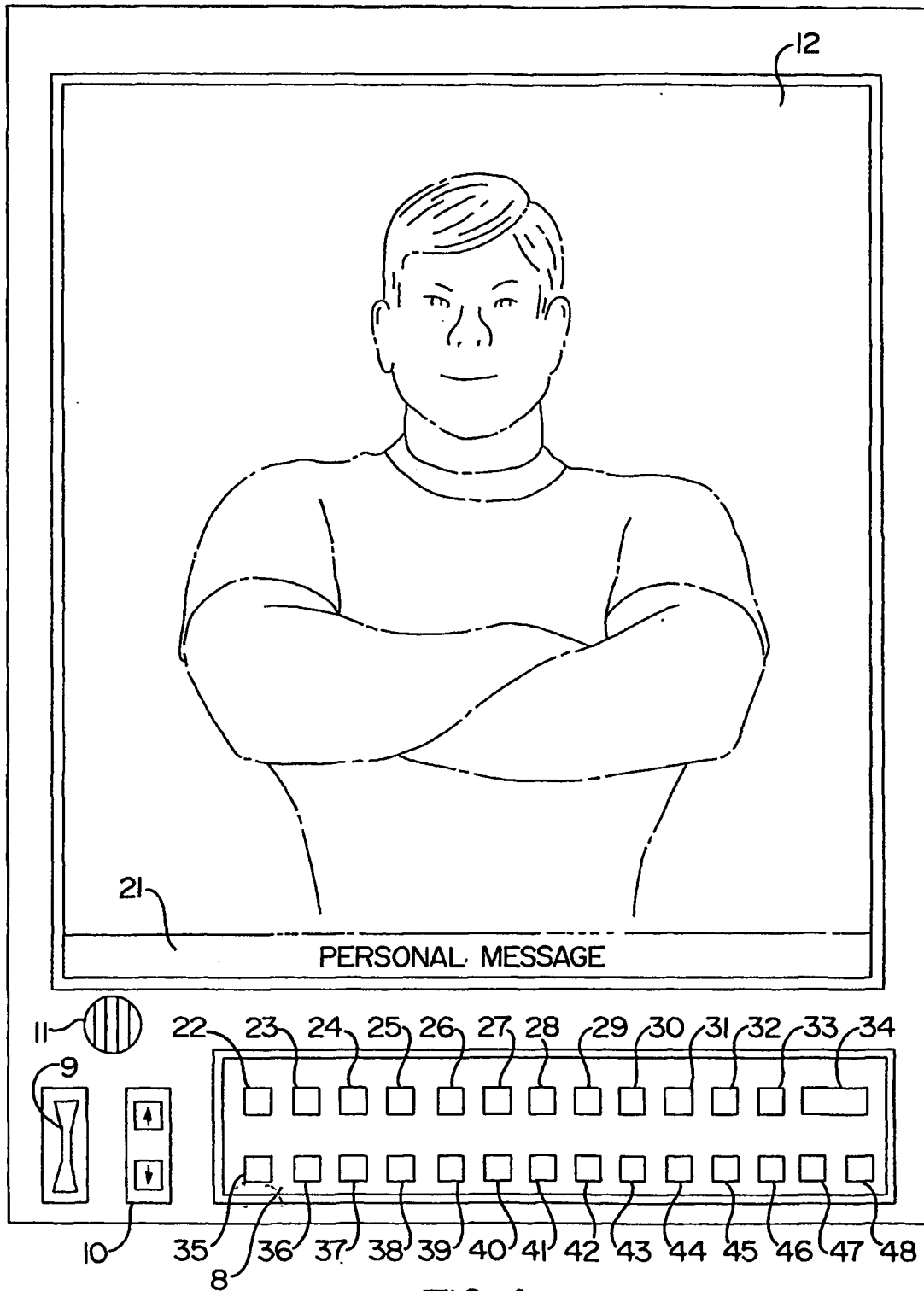
1 17. A digital photo album according to claim 1, including:
2 a speaker unit for announcing to a viewer predetermined information concerning
3 an individual image being viewed; and
4 said predetermined information including, but not limited to, the date upon
5 which the image was taken.

1 18. A digital photo album according to claim 1, including:
2 a printer output to print a hard copy of an image when desired.

1 19. A digital photo album according to claim 1, wherein:
2 said functional keypad unit enables a user to selectively scroll forward through
3 images stored in said memory means, scroll backwards through said images
4 stored in said memory means, and to go to an specific image stored in said
5 memory means.

1 20. A digital photo album according to claim 2, including:
2 a speaker unit for announcing to a viewer predetermined information
3 concerning an individual image being viewed; and
4 said predetermined information including, but not limited to, the date upon
5 which the image was taken.





3/3

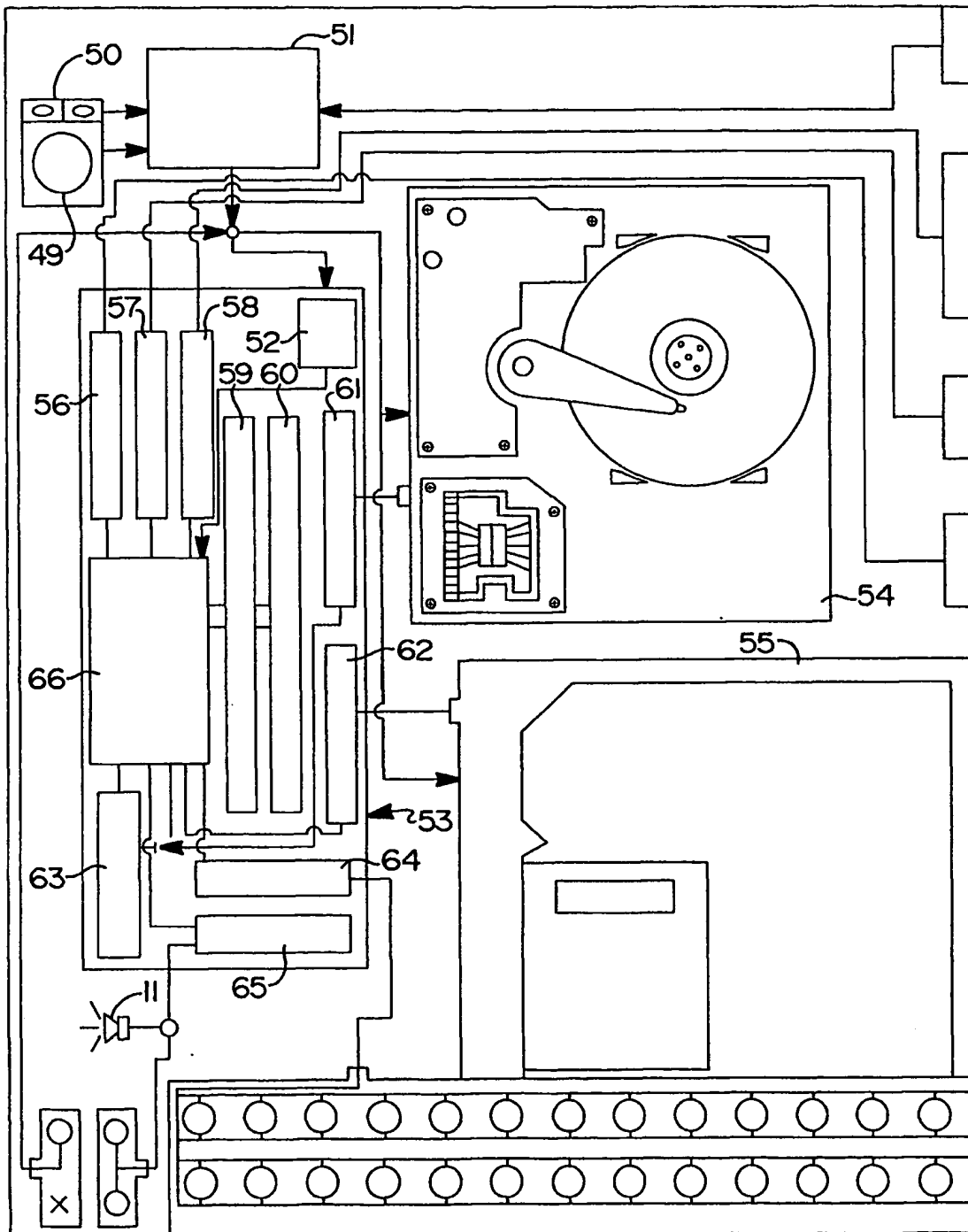


FIG 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/12830

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 3/14

US CL :345/350,302,326,333,335; 358/403; 707/104

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 345/350,302,326,333,335,326; 358/403,909.1,906; 707/104,512

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
APS, DIALOG LINK

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,888,648 A, (TAKEUCHI ET AL.) 19 DECEMBER 1989, ABSTRACT, SUMMARY, COLUMN 1-2	1-20
Y	US. D419,534 A, (KEMP) 25 JANUARY 2000, CLAIM, DESCRIPTION, FIGURE 2.	1-20
Y,P	US. 6,111,586 (IKEDA ET AL.) 29 AUGUST 2000, ABSTRACT, SUMMARY, FIGS.4 COLUMNS 1-4.	2,4,6-8, 10 -17,20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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